OIPE IAP88
SEP 2 8 2006
PATENT & TRADEMARK OFFICE

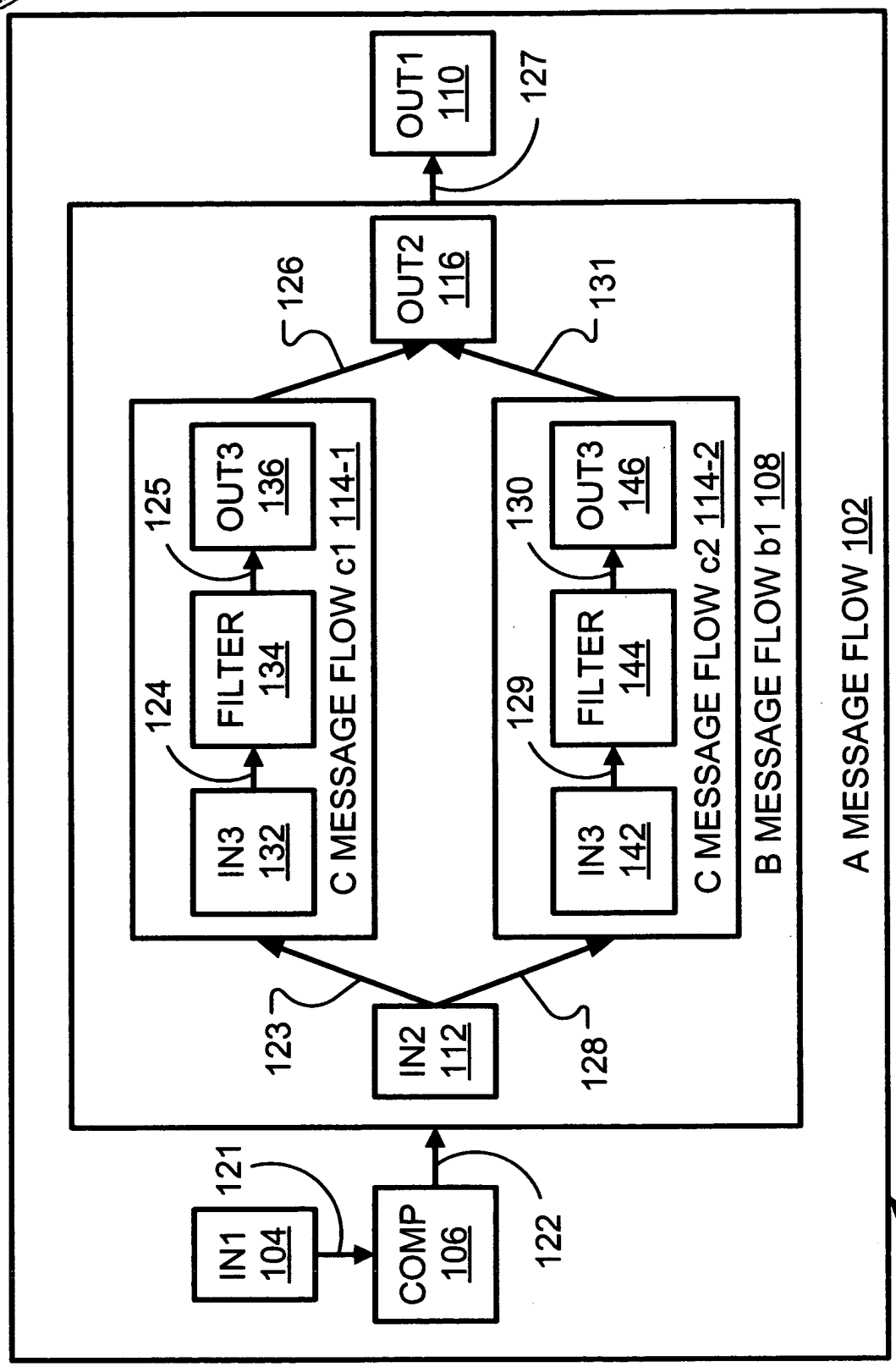


FIG. 1

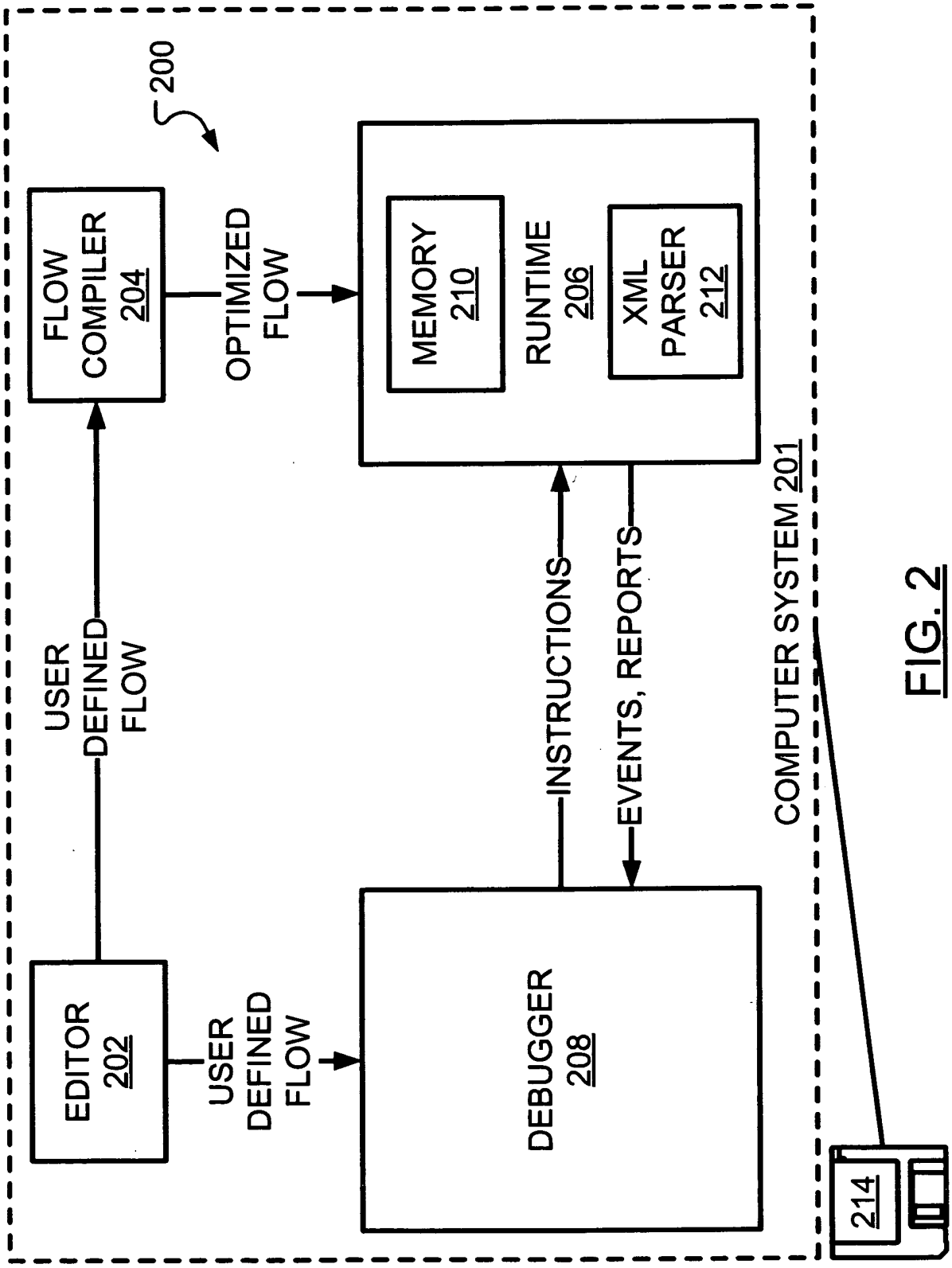

200
FLOW COMPILER 204
OPTIMIZED FLOW
MEMORY 210
RUNTIME 206
XML PARSER 212
USER DEFINED FLOW
INSTRUCTIONS
EVENTS, REPORTS
COMPUTER SYSTEM 201
EDITOR 202
USER DEFINED FLOW
DEBUGGER 208
214

FIG. 2

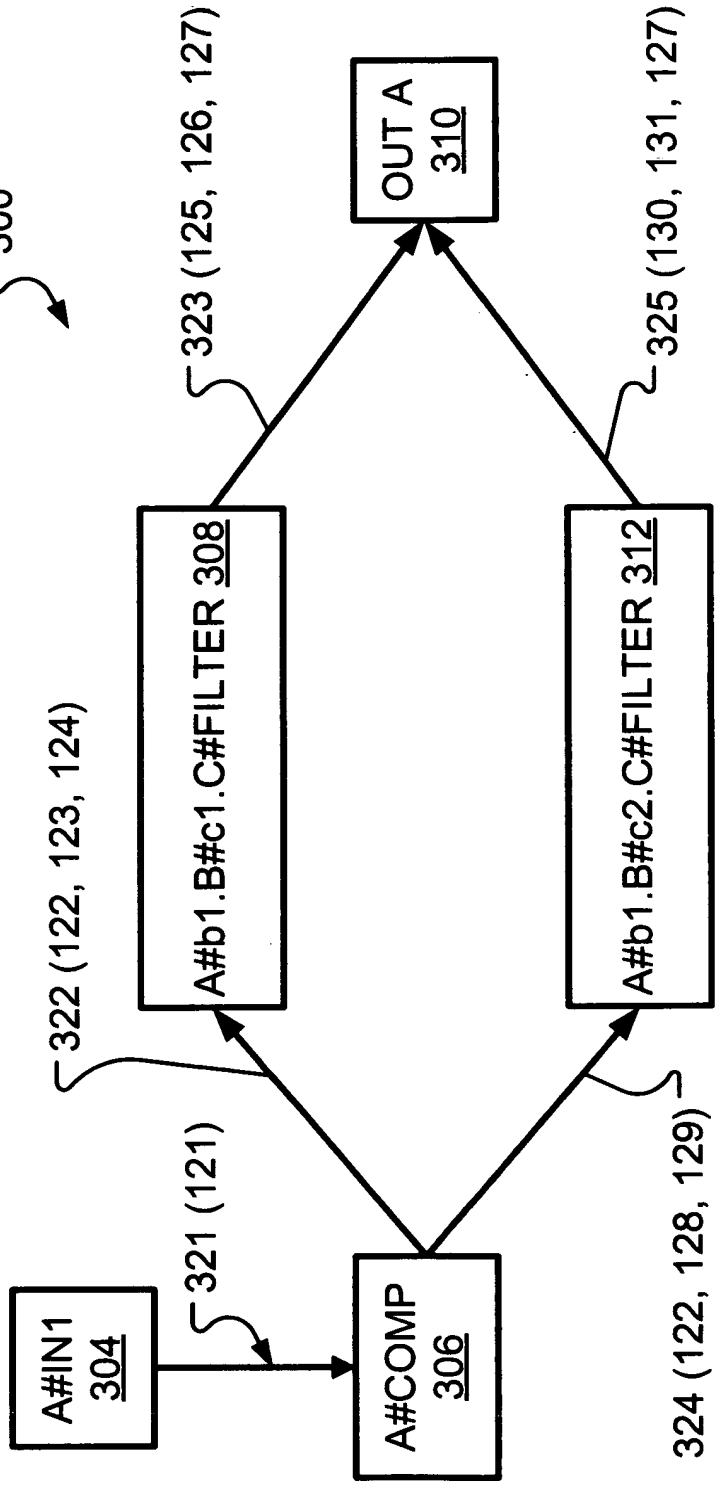
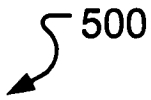

300
A#IN1
304
321 (121)
A#COMP
306
322 (122, 123, 124)
A#b1.B#c1.C#FILTER 308
323 (125, 126, 127)
OUT A
310
324 (122, 128, 129)
A#b1.B#c2.C#FILTER 312
325 (130, 131, 127)

FIG. 3

PHYSICAL CONNECTION	LOGICAL CONNECTIONS
321	121
322	122, 123, AND 124
323	125, 126, AND 127
324	122, 128, AND 129
325	130, 131, AND 127

FIG. 4




```
<PhysicalConnection sourceNode = id of source node
        sourceTerminal = terminal name
        targetNode = id of target node
        targetTerminal = terminal name >
    <!-- list of contained logical connections in order -->
    <LogicalConnection .../>
    <LogicalConnection .../>
<PhysicalConnection>
```

FIG. 5

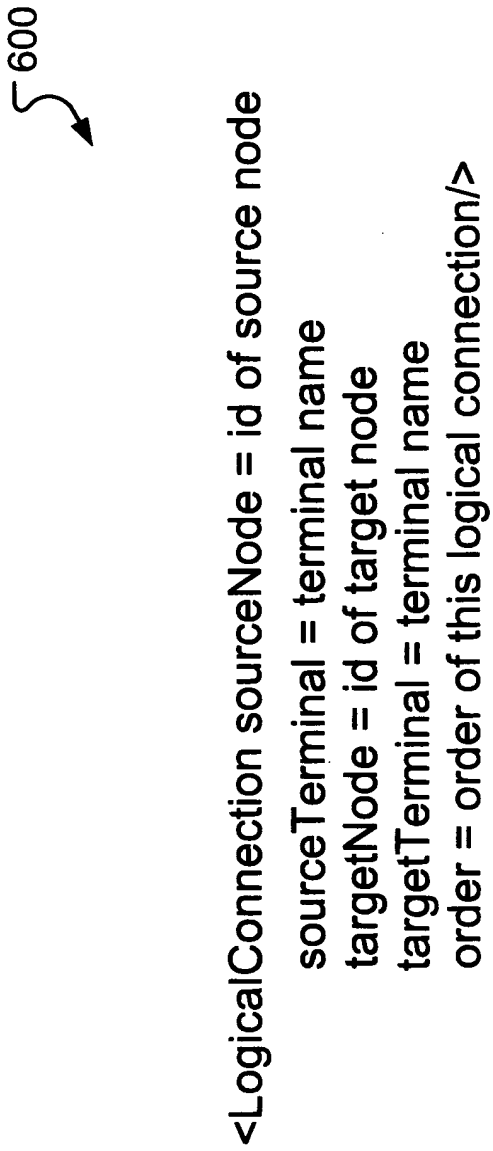

600
<LogicalConnection sourceNode = id of source node
sourceTerminal = terminal name
targetNode = id of target node
targetTerminal = terminal name
order = order of this logical connection/>

FIG. 6

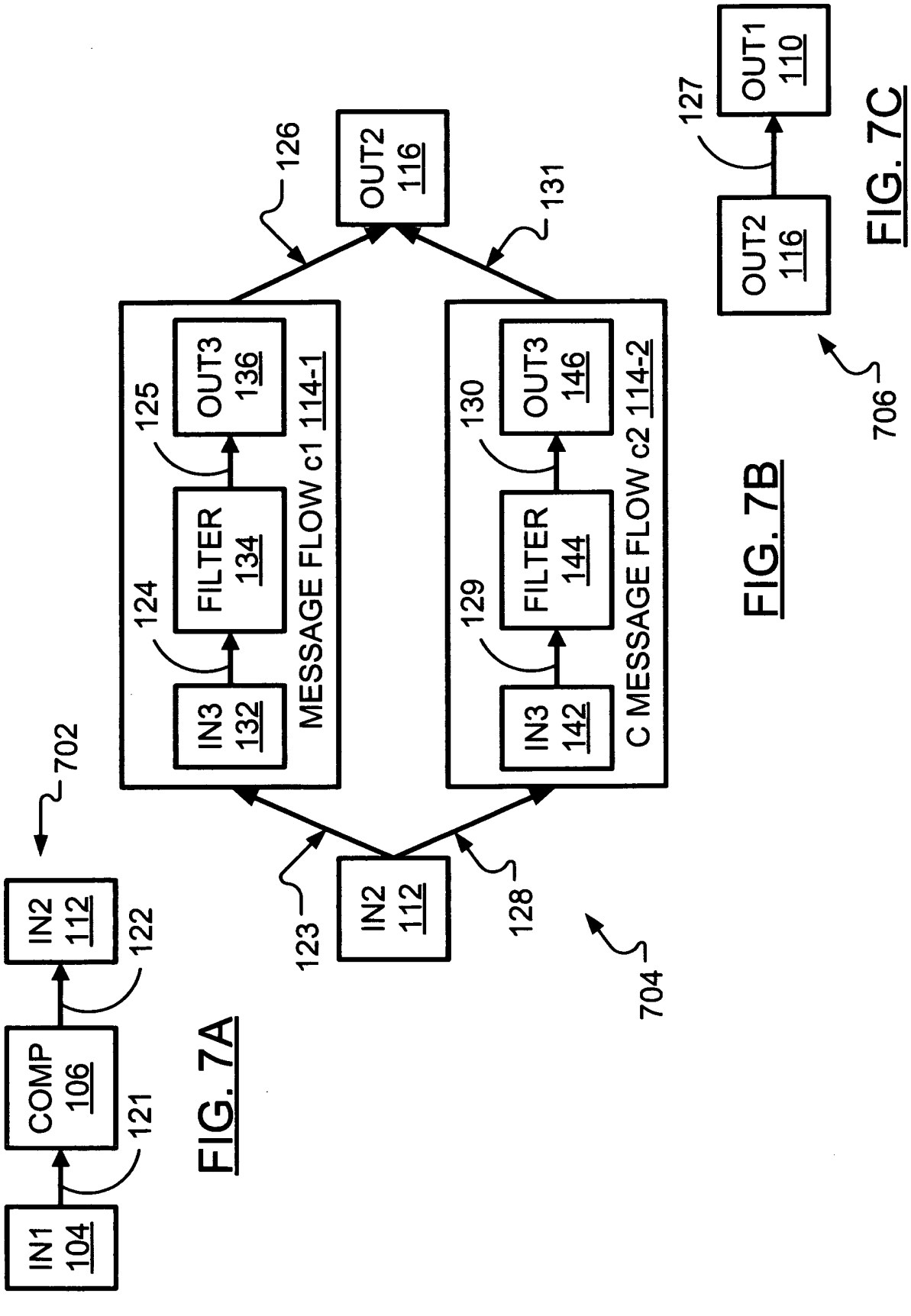


FIG. 7A

FIG. 7B

FIG. 7C

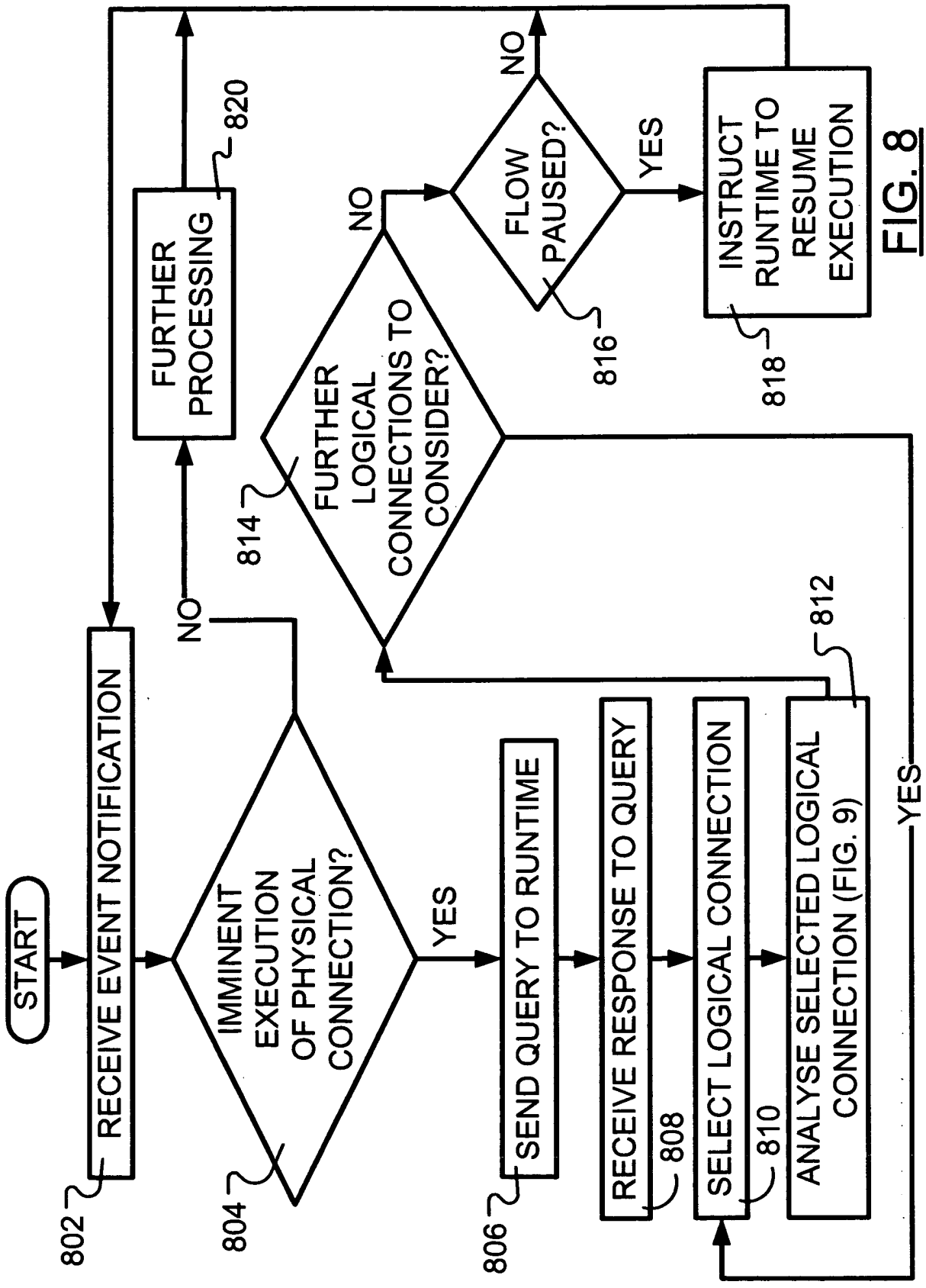

START
RECEIVE EVENT NOTIFICATION
802
IMMINENT EXECUTION OF PHYSICAL CONNECTION?
804
NO
YES
SEND QUERY TO RUNTIME
806
RECEIVE RESPONSE TO QUERY
808
SELECT LOGICAL CONNECTION
810
ANALYSE SELECTED LOGICAL CONNECTION (FIG. 9)
812
FURTHER LOGICAL CONNECTIONS TO CONSIDER?
814
NO
YES
FLOW PAUSED?
816
NO
YES
INSTRUCT RUNTIME TO RESUME EXECUTION
818
FURTHER PROCESSING
820

FIG. 8

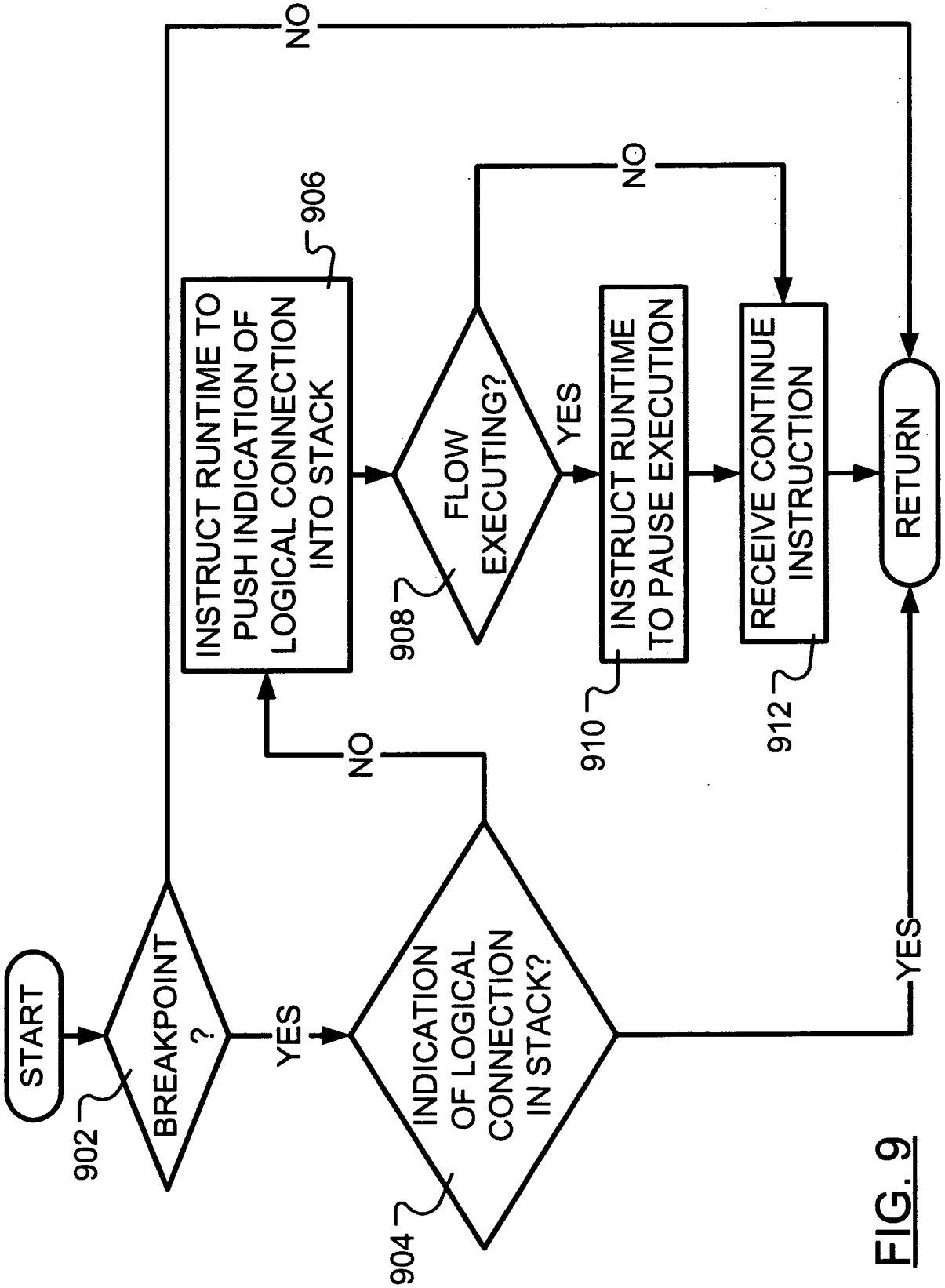

START
BREAKPOINT ?
902
YES
NO
INDICATION OF LOGICAL CONNECTION IN STACK?
904
YES
NO
INSTRUCT RUNTIME TO PUSH INDICATION OF LOGICAL CONNECTION INTO STACK
906
FLOW EXECUTING?
908
YES
NO
INSTRUCT RUNTIME TO PAUSE EXECUTION
910
RECEIVE CONTINUE INSTRUCTION
912
RETURN

FIG. 9

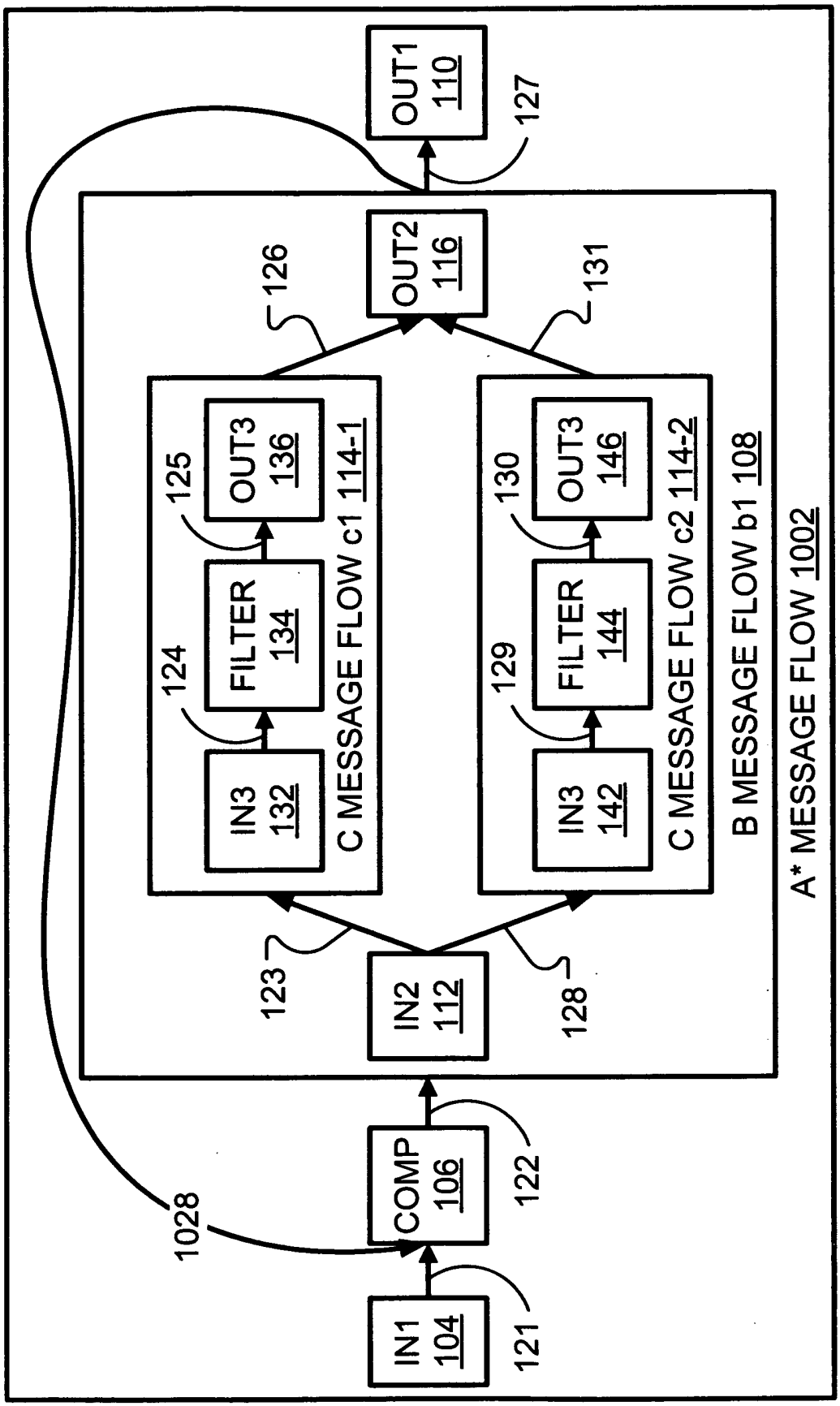

A* MESSAGE FLOW 1002
B MESSAGE FLOW b1 108
C MESSAGE FLOW c1 114-1
C MESSAGE FLOW c2 114-2
IN1 104
COMP 106
IN2 112
IN3 132
FILTER 134
OUT3 136
IN3 142
FILTER 144
OUT3 146
OUT2 116
OUT1 110
1028
121
122
123
124
125
126
127
128
129
130
131
1000

FIG. 10

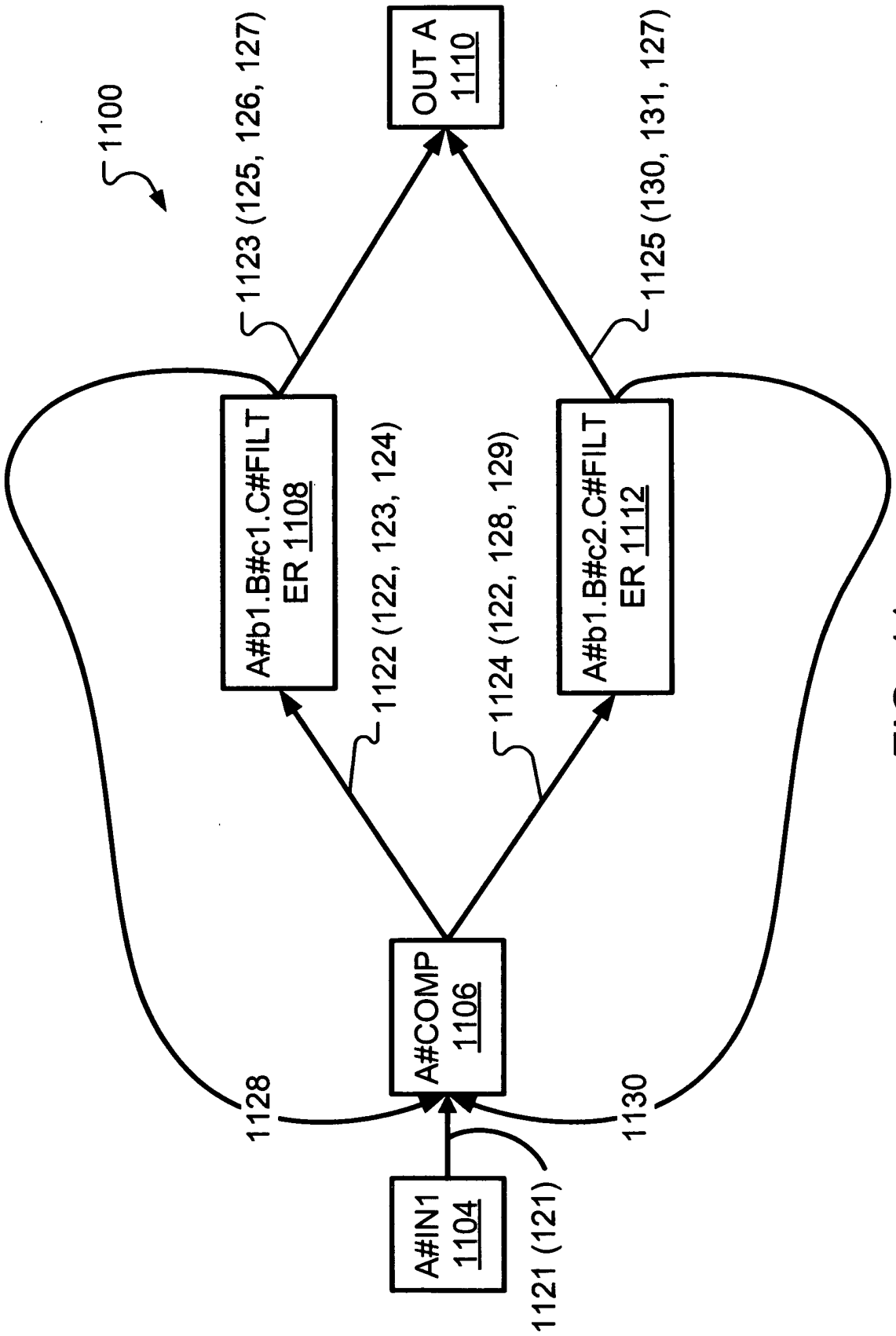

1100
OUT A
1110
1123 (125, 126, 127)
1125 (130, 131, 127)
A#b1.B#c1.C#FILT
ER 1108
A#b1.B#c2.C#FILT
ER 1112
1122 (122, 123, 124)
1124 (122, 128, 129)
A#COMP
1106
1128
1130
A#IN1
1104
1121 (121)

FIG. 11